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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/974,963	10/09/2001	Somnath Mitra	CISCO-4903	7590

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EXAMINER	
KHOO, FOONG LIN	
ART UNIT	**PAPER NUMBER**
2664	

DATE MAILED: 06/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/974,963	MITRA ET AL.	
	Examiner	Art Unit	
	F. Lin Khoo	2664	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10-09-2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,4,6,9,11,14,16,19,21,22,23,24,25* is/are rejected.

7)☒ Claim(s) *2,3,5,7,8,10,12,13,15,17,18,20* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _____ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 2, 3, 4, 7, 8, 9, 12, 13, 14, 17, 18, 19, 23, 24 and 25 are objected to because of the following informalities: The definitions of the variables in the equation are not defined in the claims. Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 4, 9, 14, 19 and 25 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The specification fails to show how N is chosen such that (2*N-1) fits into the word length. Further it does not disclose what the word length is and how N is computed such that it fits into the word length.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 23, 24, and 25 recite the limitation "router " in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claims 22 and 24 recite the limitation "said second value" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim 23 recites the limitation "said first value" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1, 6, 11, 16, 21 and 22 are rejected under 35 U.S.C. 102(e) as being anticipated by Stiliadis and Varma (U.S. Patent No 6,134,217), herein referred to as Stiliadis et al.

Regarding claim 1, Stiliadis et al. discloses a method for queuing packets for transmission (Figure 3 shows each of the output link interface modules includes a plurality of packets queued for transmission 308 and a traffic scheduler 310) comprising:

assigning each packet a first value (Starting Potential (SP(i,k)) (Figure 6 - shows flowchart of processing steps performed when a new packet arrives at the Output Link Interface Module. The starting potential and timestamp of the packet are computed via step 604 and is shown in Figure 7 as individual computation steps. Refer to steps 704 and 706, col 16, lines 15 -37);

dynamically assigning each said packet a second value(Timestamp (TS(i,k)) (Figure 7- Refer to step 708, col 16, lines 37-38); and

queuing each said packet for transmission using said first and said second value (Figure 12 shows transmission sequence of packets in the scheduling system).

Regarding claim 6, Stiliadis et al. discloses an apparatus for queuing packets for transmission comprising:

means for assigning each packet a first value (Figure 7- Refer to steps 704 and 706, col 16, lines 15 -37);

means for dynamically assigning each said packet a second value (Figure 7- Refer to step 708, col 16, lines 37-38); and

means for queuing each said packet for transmission using said first and said second value (Figure 4 shows the output link interface module 306. The output link interface module 306 includes processor 350 which controls Packet Queue 352 and Starting Potential (SP) Queue 356, and transmitter 354, the functions are described in col 14, lines 49 –67 and col 15, lines 1 –23).

Regarding claim 11, Stiliadis et al. discloses a program storage device readable by a machine, tangibly embodying a program of instructions executable by the machine to perform a method for queuing packets for transmission comprising:

assigning each packet a first value;

dynamically assigning each said packet a second value; and

queuing each said packet for transmission using said first and said second value. (Figure 18 shows a system with flip-flops (element 1802) which are also referred to as storage elements that implements the priority queue. In col 10, lines 66-67 and col 11, lines 1-8 Stiliadis et al. states that the invention can be implemented using microprocessor and/or digital signal processor hardware, read-only memory (ROM) or random-access memory (RAM) for storing software performing the operations and storing the results. Very large scale integration (VLSI) hardware embodiments, as well as custom VLSI circuits may also be used to implement the functional blocks. Field-programmable gate arrays (FPGAs), or other programmable logic devices, possibly in combination with read-only memory or random-access memory, may also be provided).

Regarding claim 16, Stiliadis et al. discloses a router comprising:

a processor configured to assign each packet a first value;

dynamically assign each said packet a second value; and

queue each said packet for transmission using said first and said second value (Figure 1 shows a network that utilizes the system and method of the invention. Col 11, lines 9-23, indicates switches (element 12, 14 and 16) also referred to as routers in the description of Figure 1).

Regarding claims 21 and 22, a machine readable medium including a packet to be routed, said packet further including at least a first value and a second value wherein each said first and second values are used for queuing. The machine readable

medium, wherein said second value is dynamically assigned. The machine readable medium is inherent in the disclosure of Stiliadis et al. because for the invention to be implemented the executable software performing the functions and the results are stored in memory which can be read by a machine such as a processor in a router (col 10, lines 66-67 and col 11, lines 1-8).

Allowable Subject Matter

8. Claims 2, 3, 5, 7, 8, 10, 12, 13, 15, 17, 18, 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 5,732,087 to Lauer et al. teaches an ATM network system that have a tag-based primary queue organized by priority, a secondary queue for cells waiting for transmission and the combination of queues that allow for round robin scheduling.

U.S. Patent No. 6,101,193 to Ohba teaches a packet scheduling scheme for improving short time fairness characteristics in weighted fair queuing corresponding to each flow ID.

Both the prior arts cited, however, do not teach the applicant's invention of using a first value and a dynamically assigned second value in each packet in the queue for transmission.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to F. Lin Khoo whose telephone number is 571-272-5508. The examiner can normally be reached on flex time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on 571-272-3134. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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WELLINGTON CHIN
SUPERVISORY PATENT EXAMINER